



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Re Application of:

**Pauli SEPPINEN** : Confirmation No. **3300**  
Serial No: **10/606,284** : Examiner: **Eugene YUN**  
Filed: **June 25, 2003** : Group Art Unit: **2618**

For: **BLUETOOTH RF BASED RF-TAG READ/WRITE STATION**

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**BRIEF FOR APPELLANT (37 C.F.R. § 41.37)**

Sir:

This brief is in furtherance of the Notice of Appeal filed in this case on March 8, 2010 along with a Pre-Appeal Brief Request for Review. This is an appeal from the final Office Action mailed December 4, 2009 rejecting claims 1-22, and in response to the Notice of Panel Decision mailed June 10, 2010.

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**I. REAL PARTY IN INTEREST (37 C.F.R. § 41.37(c)(1)(i))**

The real party in interest in this appeal is Nokia Corporation, a corporation organized under the laws of Finland.

**II. RELATED APPEALS AND INTERFERENCES (37 C.F.R. § 41.37(c)(1)(ii))**

There are no related appeals or interferences.

**III. STATUS OF CLAIMS (37 C.F.R. § 41.37(c)(1)(iii))**

Claims 1-22 are pending in this application. Claim 1-22 are rejected, and the rejection of claims 1-22 is being appealed.

**IV. STATUS OF AMENDMENTS (37 C.F.R. § 41.37(c)(1)(iv))**

No amendment was filed after the final rejection, and therefore all amendments have been entered.

**V. SUMMARY OF CLAIMED SUBJECT MATTER (37 C.F.R. § 41.37(c)(1)(v))**

Independent claim 1 is directed to a dual mode transceiver that includes a mixer. *See* specification page 8, lines 4-6; Figure 1 (22 or 26). The dual mode transceiver further includes a controller configured to adapt the transceiver to operate in two modes operating either as a radio frequency tag reader or as a Bluetooth transceiver by changing reception and transmission capabilities of the transceiver. *See* specification page 6, lines 33-34; page 7, line 33—page 8, line 1; page 8, lines 16-18; Figure 1 (66a, 66b). The controller is further configured to control the mixer to operate in both of the two modes. *See* specification page 8, lines 6-8. The mixer is useable for said transceiver operating as said radio frequency tag reader or as said Bluetooth transceiver. *See* specification page 8, lines 8-18.

Independent claim 5 is directed to a radio device having a radio receiver and a radio transmitter. *See* specification page 6, line 20; Figure 1 (1). In claim 5 the operability of radio device is by using a single antenna in two modes. *See* specification page 20, lines 20-24; Figure 1 (10). The radio device of claim 5 is configured to operate in a bluetooth mode and a radio frequency tag reader mode by control of a same mixer of the receiver or of the transmitter to operate said same mixer in both of the two modes. *See* specification page 8, lines 6-18. The

radio receiver and the radio transmitter include a single transceiver that is operable as a bluetooth transceiver using the single antenna in said bluetooth mode and as a radio frequency tag reader using the single antenna in the radio frequency tag reader mode by control of its reception and transmission capabilities. *See* specification page 8, lines 16-18.

Independent claim 10 is directed to an apparatus that includes a transceiver including a radio receiver and a radio transmitter, and a signal processor. *See* Figure 1 (1, 62). The radio receiver is responsive to an incoming analog radio signal for providing a down converted and modulated signal to said signal processor. *See* specification page 8, lines 26-29; Figure 1 (22, 26). The radio transmitter is responsive to an output signal from said signal processor for transmission as an outgoing analog radio signal. *See* specification page 9, lines 14-20. The apparatus of claim 10 also includes a controller for controlling said apparatus in two modes. *See* specification page 8, lines 6-8; Figure 1 (66a, 66b). The first mode is for operating as a Bluetooth device and the second mode for operating as a radio frequency tag reader. *See* specification page 6, lines 33-34; page 7, line 33—page 8, line 1; page 8, lines 16-18. The radio receiver and the radio transmitter include a single transceiver that is configured to operate with a single antenna as the radio frequency tag reader or as a Bluetooth transceiver by controlling a same mixer of the receiver or the transmitter to operate in both the first mode and the second mode. *See* specification page 8, lines 16-18.

Independent claim 11 is directed to a control for controlling a radio device in two modes. *See* specification page 8, lines 6-8; Figure 1 (66a, 66b). The first mode for operating as a Bluetooth transceiver and the second mode for operating as a radio frequency tag reader. *See* specification page 6, lines 33-34; page 7, line 33—page 8, line 1; page 8, lines 16-18. The radio device includes a single transceiver controlled by said control to operate as the radio frequency tag reader or as the Bluetooth transceiver by changing its reception and transmission capabilities by controlling a mixer to operate both in the first mode operating as a mixer for the radio device operating as the Bluetooth transceiver and in the second mode operating as a mixer for the radio device operating as the radio frequency tag reader. *See* specification page 6, lines 33-34; page 7, line 33—page 8, line 1; page 8, lines 16-18.

Independent claim 14 is directed to a method that includes switching a mode of a single transceiver able to operate as a radio frequency tag reader in one mode and as a Bluetooth transceiver in another mode by adapting a same mixer of said single transceiver to operate in

both modes. *See* specification page 6, lines 33-34; page 7, line 33—page 8, line 1; page 8, lines 16-18. The method further includes using a single antenna for the single transceiver operating as the radio frequency tag reader or as the Bluetooth transceiver. *See* specification page 8, lines 8-18.

**VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL (37 C.F.R. § 41.37(c)(1)(vi))**

Claims 1-22 are rejected under 35 U.S.C. § 103(a) as unpatentable over *Bridgelall* (U.S. Patent No. 6,717,516) in view of *Gunnarsson* (WO 01/39103).

**VII. ARGUMENT (37 C.F.R. § 41.37(c)(1)(vii))**

*Rejection Under 35 U.S.C. § 103(a) as unpatentable in view of U.S. Patent No. 6,717,516 and WO 01/39103*

Claim 1

Appellant respectfully submits that the cited references fail to disclose or suggest claim 1, because the cited references, alone or in combination, fail to disclose or suggest all of the limitations of claim 1. Claim 1 recites that the controller is configured to control the mixer to operate either as a radio frequency tag reader or as a Bluetooth transceiver by changing reception and transmission capabilities of the transceiver. The mixer is not only usable in the sense of being incorporated into the same integrated circuit with another mixer for the Bluetooth transceiver part of the integrated circuit. In contrast to claim 1, *Gunnarsson* only discusses that an RFID functionality can be integrated into a Bluetooth radio in a compact manner in a handheld portable electronic device.

The Office relies upon the combination of *Bridgelall* and *Gunnarsson* in rejecting claim 1. *Bridgelall* is directed to devices having either wireless data communication capability or RFID tags located using dual function fixed devices throughout a facility. The devices will identify those units which they are communicating using a wireless radio data communications protocol and also identify items within the local area using RFID tags on the units. *See Bridgelall* Abstract. The Office acknowledges on page 2 of the Office Action that *Bridgelall* does not disclose controlling the mixer to operate in both of two modes, where the mixer is usable for the transceiver operating as a RF tag reader or the Bluetooth transceiver, and relies

upon *Gunnarsson* for this teaching. *Gunnarsson* is directed to a system that includes a mobile communications unit, where an identification module is added between a radio part and an antenna in a mobile telephone that includes a Bluetooth function, and the mobile includes a mixer for transposing identification messages from identification devices in a 2.45 GHz RFID system of the backscatter type to a baseband for further processing in the computer part of the unit and possibly communication with a superordinate system via standard cell channel or Bluetooth channel. See *Gunnarsson* Abstract. However, for at least the following reasons, appellant respectfully submits that *Gunnarsson* fails to make up for the deficiencies in the teachings of *Bridgelall* identified above.

The Office asserts that *Gunnarsson* discloses a mixer that is usable for a transceiver operating as a RF tag reader or a Bluetooth transceiver, since *Gunnarsson* discloses that a mixer (27) is integrated in a Bluetooth unit, and therefore the same mixer is used for both Bluetooth and RFID functions. Figure 2 of *Gunnarsson* shows a write/read unit of an RFID system of the backscatter type integrated with a telephone that includes a Bluetooth channel. See *Gunnarsson* page 4, lines 21-22. The RFID module (26) integrated in the mobile telephone uses the same radio part (24) and antenna (25) as the Bluetooth function. See *Gunnarsson* page 5, lines 20-22. The addition of the RFID module (26) consists of the inclusion of a mixer (27) between the radio part (24) and the antenna (25). The information carrying signal from an identification device is tapped-off at a junction point (29) so as to obtain a baseband signal with identification message. See *Gunnarsson* page 5, lines 22-26. However, since the Bluetooth function of the mobile telephone functions without the addition of the mixer (27), *Gunnarsson* does not disclose or suggest that the mixer (27) operates in both RFID mode and Bluetooth mode, as recited in claim 1.

The Office asserts that in another embodiment of *Gunnarsson* the mixer (27) is included in standard circuits of the Bluetooth radio so that the portable communications unit is adapted to read identification devices that deliver backscatter signals according to the Bluetooth standard. See *Gunnarsson* page 6, lines 4-7. This embodiment of *Gunnarsson* is entirely distinct from the previous embodiment in which RFID is used to transmit the identification signals. Accordingly, in one embodiment Bluetooth is used for the signals, while in the other embodiment RFID is used for the signals. However, *Gunnarsson* does not disclose an embodiment in which the mixer can operate in both of the two modes, as recited in claim 1. If the mixer (27) is included in

the standard circuits of the Bluetooth radio (24), then it cannot be included RFID module (26), and therefore does not operate according to RFID. Instead, in the embodiment in which the mixer (27) is included in the Bluetooth radio (24), the RFID module (26) is not included in the portable communications unit. Therefore, the mixer (27) is not usable for a transceiver operating as a radio frequency tag reader or as a Bluetooth transceiver, but is only usable for one of those two modes. Accordingly, for at least the reasons discussed above, claim 1 is not disclosed or suggested by the cited references.

Claims 2-4, 12-14, 17 and 19

Claims 2-4, 12-14, 17 and 19 ultimately depend from claim 1, and therefore are not disclosed or suggested by the cited references at least in view of their dependencies. Furthermore, the *Gunnarsson* reference does not mention that the controller is configured to control the mixer to operate with different gain and a bias current according to the mode of operation as a radio frequency tag reader or as a Bluetooth transceiver.

Claim 5

Independent claim 5 contains limitations similar to those recited in claim 1, and therefore is not disclosed or suggested by the cited reference for at least the reasons discussed above with respect to claim 1.

Claims 6-9

Claims 6-9 ultimately depend from claim 5, and therefore are not disclosed or suggested by the cited references at least in view of their dependencies.

Claim 10

Independent claim 10 contains limitations similar to those recited in claim 1, and therefore is not disclosed or suggested by the cited reference for at least the reasons discussed above with respect to claim 1.

Claim 20

Claim 20 ultimately depends from independent claim 10, and therefore is not disclosed or suggested by the cited references at least in view of its dependency. *Gunnarsson* does not teach that the control is configured to control the mixer to operate with a different gain and bias current in the first mode than in the second mode.

Claim 11

Independent claim 11 contains limitations similar to those recited in claim 1, and therefore is not disclosed or suggested by the cited reference for at least the reasons discussed above with respect to claim 1.

Claims 18 and 21

Claims 18 and 21 ultimately depend from claim 11, and therefore are not disclosed or suggested by the cited references at least in view of their dependencies. Regarding claim 21, *Gunnarsson* does not teach that the control is configured to control the mixer to operate with a different gain and bias current in the first mode than in the second mode.

Claim 14

Independent claim 14 contains limitations similar to those recited in claim 1, and therefore is not disclosed or suggested by the cited reference for at least the reasons discussed above with respect to claim 1.

Claims 15-16 and 22


Claims 15-16 and 22 ultimately depend from claim 14, and therefore are not disclosed or suggested by the cited references at least in view of their dependencies. Regarding claim 22, *Gunnarsson* does not teach adapting the same mixer of the single transceiver to operate in both modes comprising adapting a first selected gain and bias current in the one mode and a second selected gain and bias current in the other mode.

Conclusion

For the reasons discussed above, applicant respectfully submits that the rejections of the final Office Action have been shown to be inapplicable, and respectfully requests that the Board reverse the rejections of pending claims 1-22. If any additional fee is required for submission of this Appeal Brief, the Commissioner is hereby authorized to charge Deposit Account No. 23-0442.

Respectfully submitted,

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## CLAIMS APPENDIX

1. A dual mode transceiver, comprising:  
  
a mixer; and  
  
a controller configured to adapt the transceiver to operate in two modes operating either as a radio frequency tag reader or as a Bluetooth transceiver by changing reception and transmission capabilities of the transceiver, wherein the controller is configured to control the mixer to operate in both of the two modes, wherein the mixer is useable for said transceiver operating as said radio frequency tag reader or as said Bluetooth transceiver.
2. The dual mode transceiver of claim 1, wherein said Bluetooth transceiver is useable as a transceiver for a 2.4 gigahertz industrial, scientific and medical band radio frequency tag reader system.
3. The dual mode transceiver of claim 1, wherein said transceiver comprises an integrated circuit.
4. The dual mode transceiver of claim 1 for said use in said electronic device comprising a mobile terminal device.
5. Radio device having a radio receiver and a radio transmitter wherein operability of said device is by using a single antenna in two modes, wherein said device is configured to operate in a bluetooth mode and a radio frequency tag reader mode by control of a same mixer of said receiver or of said transmitter to operate said same mixer in both of the two modes, said radio

receiver and said radio transmitter comprising a single transceiver that is operable as a bluetooth transceiver using said single antenna in said bluetooth mode and as a radio frequency tag reader using said single antenna in said radio frequency tag reader mode by control of its reception and transmission capabilities.

6. The radio device of claim 5, wherein said operability of said radio device in either mode is by using said radio receiver and said radio transmitter.

7. The radio device of claim 5, wherein said radio device is incorporated in a device having additional device functionality.

8. The radio device of claim 7, wherein said device in which said radio device is incorporated comprises a mobile telephone.

9. The radio device of claim 5, wherein said radio device is for installation in a mobile telephone.

10. Apparatus comprising a transceiver including a radio receiver and a radio transmitter, and further comprising a signal processor, wherein the radio receiver is responsive to an incoming analog radio signal for providing a down converted and modulated signal to said signal processor, wherein the radio transmitter is responsive to an output signal from said signal processor for transmission as an outgoing analog radio signal, said apparatus further comprising a controller for controlling said apparatus in two modes, a first mode for operating as a Bluetooth

device and a second mode for operating as a radio frequency tag reader wherein said radio receiver and said radio transmitter comprise a single transceiver that is configured to operate with a single antenna as said radio frequency tag reader or as a Bluetooth transceiver by controlling a same mixer of said receiver or said transmitter to operate in both the first mode and the second mode.

11. A control for controlling a radio device in two modes, a first mode for operating as a Bluetooth transceiver and a second mode for operating as a radio frequency tag reader wherein said radio device comprises a single transceiver controlled by said control to operate as said radio frequency tag reader or as said Bluetooth transceiver by changing its reception and transmission capabilities by controlling a mixer to operate both in the first mode operating as a mixer for the radio device operating as said Bluetooth transceiver and in the second mode operating as a mixer for the radio device operating as said radio frequency tag reader.

12. Mobile telephone, comprising the transceiver of claim 1 in combination with means for communicating with a radio access network over a radio interface.

13. The mobile telephone of claim 12, wherein said means for communicating includes a signal processor and a mobile telephone transceiver.

14. Method, comprising,

switching a mode of a single transceiver able to operate as a radio frequency tag reader in one mode and as a Bluetooth transceiver in another mode by adapting a same mixer of said single transceiver to operate in both modes, and

using a single antenna for said single transceiver operating as said radio frequency tag reader or as said Bluetooth transceiver.

15. The method of claim 14, wherein said single transceiver is both for interrogating a radio frequency tag and for participating in a Bluetooth piconet.

16. The method of claim 15, wherein said single transceiver and said single antenna are for use in a mobile telephone and wherein said method further comprises operating a mobile telephone transceiver of said mobile telephone over a radio interface to a radio access network.

17. The dual mode transceiver of claim 1, wherein a single antenna is useable for said transceiver operating as said radio frequency tag reader or as said Bluetooth transceiver.

18. The control of claim 11, wherein said single transceiver is configured to operate with a single antenna when operating as said radio frequency tag reader or as said Bluetooth transceiver.

19. The dual mode transceiver of claim 1, wherein said controller is configured to control the mixer to operate with a different gain and bias current according to mode of operation as a radio frequency tag reader or as a Bluetooth transceiver.

20. The apparatus of claim 10, wherein said controller is configured to control the mixer to operate with a different gain and bias current in said first mode than in said second mode.

21. The control of claim 11, wherein said control is configured to control the mixer to operate with a different gain and bias current in said first mode than in said second mode.

22. The method of claim 14, wherein said adapting said same mixer of said single transceiver to operate in both modes comprises adapting a first selected gain and bias current in said one mode and a second selected gain and bias current in said other mode.

**EVIDENCE APPENDIX**

None.

**RELATED PROCEEDINGS APPENDIX**

None.